THE INSTITUTE OF PHYSICS
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BULLETIN

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CONTRIBUTIONS FROM MEMBERS

The International Council of Scientific Unions (I.C.S.U.) and The International Union of Pure and Applied Physics (I.U.P.A.P.)

[*The following note has been written, by invitation, by Professor F. J. M. Stratton (Fellow), General Secretary of the International Council of Scientific Unions. It was felt that many members would be grateful for a summary of the valuable work now being done through the international co-operation of scientific bodies. Full details of this work are contained in the most interesting Report of Proceedings of the Fifth General Assembly of the International Council of Scientific Unions which has just been published.* (*London: Cambridge University Press. Pp.* 250. *Price* 7*s.* 6*d.*)—*Ed.*]

The First World War sadly interfered with a number of international organizations for co-operation in science, and before its end scientific academies in the allied countries began to prepare to restart some previously existing bodies and to start new ones. In July 1919 in Brussels the International Research Council was formed with twelve adhering countries, the number of adhering countries growing in the next twelve years to forty-two. Three International Unions were formed at the initial meeting of the Council in 1919—Astronomy, Geodesy and Geophysics, and Chemistry. The number of Unions grew subsequently to ten, Physics being founded in 1922. The first President of this Union was Sir William Bragg, with Professor Henri Abraham as General Secretary.

At first the International Research Council controlled the Unions, limiting their membership to countries adhering to the Council. As the Unions grew in strength and experience control by the Council became irksome, and in 1931 the Council, recognizing the changing state of affairs, altered its name and its functions and its relations with the Unions. It became the International Council of Scientific Unions (I.C.S.U.), a co-ordinating and consultative body for the Unions. The active control passed largely to the Unions, who nominated the majority of the Executive Committee, though final power remained with the General Assembly in which the national adhering bodies had the higher number of votes.

In the years before the Second World War the Unions, then only seven in number, quietly carried on their activities; Sir Richard Glazebrook and Professor R. A. Millikan succeeded Sir William Bragg in the presidency of the Union of Physics. Commissions on symbols, units and nomenclature were formed and active co-ordination was arranged with the Institut International de Co-operation Intellectuelle (I.I.C.I.) of the League of Nations. A meeting was held jointly with the Physical Society in 1934 in London and Cambridge, the report of the meeting being published in three volumes, *Les Rayons Cosmiques*, *Transmutations*, and *L'Etat Solide de la Matière* (Hermann, 1936.) The Union joined I.I.C.I. in several colloquia—Les Nouvelles Théories de la Physique (Warsaw, 1938), Les Déterminations Physico-chimique des poids moléculaires et atomiques des gaz (Neuchâtel, 1938) and Le Magnétisme (Strasbourg, 1939).

Then came the Second World War and once again barriers arose preventing active co-operation between scientists of many nations. At the conclusion of the war steps were taken once more to organize international bodies, and this time the task was much easier as the Council and Unions, though forced to be inactive for the most part during the war, already existed, with bureaux and committees able quickly to renew their earlier contacts and activities. The one exception was the Union of Physics, whose secretary, Professor Henri Abraham, had been removed from his home in Paris and put to death by the Germans. The Executive Committee of I.C.S.U. met in December 1945 under the presidency of Professor H. R. Kruyt, the pre-war President, Professor Charles Fabry, having died soon after the end of the war. A meeting of the General Assembly of I.C.S.U. was held in London in July 1946, at which two new developments were decided upon. Joint commissions to cover border-line subjects were agreed to and a formal agreement with U.N.E.S.C.O., the United Nations Educational, Scientific and Cultural Organization, was provisionally approved. The present Joint Commissions of interest to Physics are on high altitude stations, the ionosphere, physico-chemical data and standards, physics abstracting, standards constants and units of radioactivity, radio-biology, radio-meteorology, rheology and spectroscopy. The agreement with U.N.E.S.C.O., though modified from the form approved in London (and about to be modified again), led to

generous assistance from U.N.E.S.C.O. to the Council and its Unions. More than $200 000 have been given as grants-in-aid for each of the four years 1947–50; these have been devoted to travelling expenses of those attending international scientific gatherings, movements across frontiers of younger scientific workers, contributions towards publications, the rehabilitation of scientific stations of international standing. It has been generally recognized that the bringing together in friendly conference of representatives of science in many countries is one of the best ways of forwarding peaceful relations among the nations, U.N.E.S.C.O.'s chief target.

The International Union of Physics was revived by a group of officers, Professor M. Siegbahn, *President*; Professor P. P. Ewald, *Secretary*; and M. Perard, *Treasurer*. A General Assembly was held in January 1947, and the Union and its Commissions soon settled down to active work. Professor H. A. Kramers was elected *President*; Professor P. Fleury, *General Secretary*; and M. Perard, *Treasurer*. An international Commission on Optics was formed and has already held several meetings. The first President was Mr. T. Smith, F.R.S., lately Superintendent of the Light Division, National Physical Laboratory.

The Union of Physics has organized a number of colloquia: e.g. on cosmic rays, Glasgow, October 1947 and December 1951, on thermodynamics, Brussels, January 1948, on the physics of metals, Amsterdam, July 1948, and on cryomagnetic phenomena, Paris, November 1948. The Union of Physics has now twenty-five adhering countries, I.C.S.U. forty-three adhering countries. A recent account of I.C.S.U. is to be found in *Nature* (**166**, 808, November 11, 1950). The present officers of I.C.S.U. are Professor A. Von Muralt, Berne, *President*; Professor E. Borel, Paris, and Professor H. Solberg, Oslo, *Vice-Presidents*; and Emeritus Professor F. J. M. Stratton, Cambridge, *General Secretary*. The publications are *Reports of Proceedings of the General Assembly* every three years and *Reports of the Executive Committee* in the intervening years. These are distributed pretty widely to universities and national academies. Unions have their own publications with their own more specialized distribution.

F. J. M. STRATTON.

NOTICES TO MEMBERS

Jubilee of the Science Masters' Association

On the occasion of the Jubilee meeting of the Science Masters' Association, held in London on January 2nd–5th, 1951, the following congratulatory message was sent by the Institute to Sir Robert Robinson, President of the Association.

Dear Mr. President,

The Board of The Institute of Physics, on behalf of the members of the Institute at home and abroad, sends its heartiest congratulations to the Science Masters' Association on the occasion of the Jubilee of its foundation.

In classrooms and laboratories, the members of your Association carry the responsibility of laying the foundations upon which the work of the professional scientists of the future is built and, perhaps of even greater significance, almost alone they have the opportunity of creating in the minds of those who will enter other professions and occupations some understanding and appreciation of the contribution which science can make to life.

The Institute of Physics is not only aware of the importance of the work of your Association in stimulating the lively development and constant improvement of science teaching, but is anxious to do what is within its power to encourage the teachers of physics by the recognition of their work and the elevation of their status. Many of those teachers, as is evident from your excellent annual exhibitions, possess that love of experimental science and that gift of manipulative skill which were characteristics of many of the greatest names in the history of our subject; if they can continue to infuse the same spirit into future generations, the development of science will owe them much.

Through you, Mr. President, I send to your Association the best wishes of The Institute of Physics for its continued success.

Yours sincerely,
W. E. CURTIS,
President.

The President,
The Science Masters' Association.

NEWS OF MEMBERS

Honorary Fellow

Sir Edward Appleton has been awarded a Royal Medal of the Royal Society.

Fellows

Sir James Chadwick has been awarded the Copley Medal of the Royal Society.

The following professional appointments have been notified:

E. Green—Senior Physicist, Food Research Department, Lever Brothers & Unilever Ltd., Bedford.

G. A. Jeffrey—Visiting Professor of Chemistry, The University of Pittsburgh, U.S.A. (for one year).

Professor F. A. Vick—Vice-Principal, University College of North Staffordshire.

Associates

The following professional appointments have been notified:

J. K. Donaghue—Research Officer, Shirley Institute, Manchester.

P. G. Klemens—Research Officer, Division of Physics, C.S.I.R.O., Sydney, Australia.

PUBLICATIONS RECEIVED

Physics in the Iron and Steel Industry. Pp. 74. (London: The British Iron and Steel Research Association.) Deals with the organisation of the physics department of the Association and outlines some of the investigations in progress and special techniques developed for them.

National Physical Laboratory Report for the year 1949. Pp. 68. (London: His Majesty's Stationary Office.) Price 1s. 9d. A comprehensive survey of the work of the ten divisions and test house with the details of staffs and publications.

Publications of the Department of Scientific and Industrial Research. Pp. 20. (London: His Majesty's Stationary Office.) Sectional List No. 3 of the list of Government Publications; revised to August 31, 1950.

Fuel Research 1939 *to* 1946. Pp. 70. (London: His Majesty's Stationary Office.) Price 3s. Primarily concerned with the contribution made by the Fuel Research organisation to various war-time problems. These include the use of the Coal Survey in providing coal of special properties, the production of producer gas, the development of hydrogen supplies for barrage balloons and the preparation of new fuels for flame throwers.

Photograms of the Year 1951. Pp. 20 + 64 plates. (London: Iliffe and Sons Ltd.) Price 7s. 6d. A review of outstanding work in pictorial photography with an appreciation by R. H. Mason and a survey by L. V. Chilton (Fellow), President of the Royal Photographic Society.

APPOINTMENTS VACANT

The inclusion of particulars of a vacancy must not be taken to imply that the Institute necessarily approves of the terms offered or that might be offered. Candidates should satisfy themselves that these are satisfactory, and they may always refer to the Institute for advice.

National Coal Board. Applications are invited for the undermentioned posts in the Board's Central Research Establishment at Stoke Orchard, Nr. Cheltenham.

(i) **Electrical Engineer** or **Physicist** with knowledge of application of electronics (except radio) to scientific investigation and development work. (TT/281.)

(ii) **Physicist** with special knowledge of the properties of matter or of aerodynamics with reference to the problems of flow. (TT/282.)

Candidates should have a good honours degree or equivalent qualification: industrial or post-graduate research experience would be an advantage.

Appointments will be as Scientist Grade III, on a scale rising by increments of £25 per annum to a maximum of £650 a year, the starting salary depending on qualifications and experience. The selected applicants will be required to join either the Board's Superannuation scheme for Scientists, which is drawn on lines broadly comparable with those of the F.S.S.U., or their Principal Superannuation Scheme.

Apply in writing, giving full particulars (in chronological order) of age, education, qualifications and experience (with dates) to National Coal Board, Establishments (Personnel), Hobart House, Grosvenor Place, London, S.W.1, marking envelope with relevent TT reference number quoted above. Original testimonials should *NOT* be forwarded. Closing date 24th January, 1951.

Imperial Chemical Industries Limited, Dyestuffs Division, require Honours Physics graduate with interest in industrial instrumentation. Training will be given. Salary according to qualifications and experience. Apply in writing to Staff Department, Hexagon House, Blackley, Manchester 9. Ref. Physics.

Imperial Chemical Industries Limited, Dyestuffs Division, has a vacancy for a Senior Instrument Engineer; age 28–35. A good honours degree in physics, with engineering experience, or in electrical engineering with a thorough theoretical background in applied physics essential. The post, which initially would be in the Manchester area, would involve the development and design of industrial process instruments and would include plant investigations leading to the application of instrumentation. Previous experience in industrial instrument development essential. A knowledge of servo theory and the design of electronic circuits would be an advantage. Written applications to Staff Department, Hexagon House, Blackley, Manchester, 9.

Wanted **Electrical Engineer** for a Welding Research Department in South Wales to conduct experimental research on Welding Machines in a constructional works. Candidates should be about 25–27 years of age and hold an honours degree in electricity with a good background of electronics. Apply Box No. AV. 9, The Institute of Physics, 47 Belgrave Square, London, S.W.1.

Birmingham Central Technical College, Department of Physics and Mathematics. Applications are invited for the post of **Lecturer with Special Responsibility in Physics.** Candidates should have a good Honours Degree in Physics and some industrial or research experience, preferably in electronics. Facilities for research will be available.

Salary—Burnham scale plus £150 responsibility allowance. Present Burnham scale, which is under revision, is £300–£555, with an allowance of up to £90 for degree and training. Starting salary will depend on approved teaching and industrial experience.

The person appointed will be required to take up duty as soon as possible.

Further particulars and form of application may be obtained from the Registrar, Birmingham Central Technical College, Suffolk Street, Birmingham, 1, on receipt of stamped addressed foolscap envelope. Completed forms should be returned to him not later than two weeks after the insertion of this advertisement.

The Civil Service Commissioners invite applications for permanent appointments as **Senior Experimental Officer** and **Experimental Officer** to be filled by competitive interview.

Candidates for the Senior Experimental Officer grade must have been born on or before 1st August, 1915, and for the Experimental Officer grade on or before 1st August, 1922, but for the latter grade candidates having special qualifications or experience may be admitted if born between 2nd August, 1922, and 1st August, 1924.

Candidates must have obtained the Higher School Certificate with mathematics or a science subject as a principal subject, or an equivalent qualification.

Inclusive London salary scales (men):

Senior Experimental Officer	£735–£935
Experimental Officer	£525–£675

Rates for women and for posts in the provinces are somewhat lower.

Starting salary will be determined on an assessment of the successful candidates' qualifications and experience.

Further particulars and application forms from Civil Service Commission, Scientific Branch, Trinidad House, Old Burlington Street, London, W.1, quoting No. 3351. Completed application forms must be returned by 31st January, 1951.

A well-known manufacturing company has a vacancy for a **Research Physicist** to work on physical problems on process control and to supervise the work of junior physicists in the section. This is a career appointment offering very good prospects for progress. Essential qualifications are 1st or 2nd class honours degree in physics and ability to direct the work of junior physicists. Preference will be given to candidates aged between 28 and 40 years with previous industrial experience. Starting salary within the range of £600–£800 p.a., according to experience. Apply Box No. AV.8, The Institute of Physics, 47, Belgrave Square, London, S.W.1.

Physicist required for research work in the field of metals. Candidates should have a degree in physics and preferably post-graduate experience. Salary will be according to age and experience. Applications stating qualifications and experience in full should be addressed to the Director of Research, G.K.N. Research Laboratories, Manor Works, Ettingshall, Wolverhampton.

The De Havilland Aircraft Co. Ltd., Stag Lane, Edgware, have vacancies in the Central Laboratory for physicists for expanding department on research and development of creep and fatigue testing in connection with Airframe and Aero engine materials. Permanent positions and good prospects. Apply in writing to Personnel Officer, Stag Lane, Edgware, Middlesex, stating age, qualifications, experience in detail and salary required.

Electronic Tubes Ltd. require a Physicist or Engineer to carry out development in the application of valves. The qualifications necessary are either a good honours degree or wide experience in electronics. The work will require a knowledge of all branches of electronics with perhaps a slight bias to the techniques used in television. It is intended that the post should be filled by a man able to carry considerable responsibility. The salary is in the range up to £800 per annum according to experience and qualifications. Applications to be made to the Personnel Officer, Electronic Tubes Ltd., Loudwater, High Wycombe, Bucks.

DIARY OF INSTITUTE MEETINGS

Members may bring guests to any of the meetings listed below unless otherwise indicated. Individual notification has been or will be sent to the members of the Branch or Group concerned. Other members of the Institute may obtain further particulars from the Secretary of the Institute.

Tuesday, January 16th (Electronics Group), at 5.30 p.m., at the Institute's House, 47, Belgrave Square, London, S.W.1. **Mr. R. W. Douglas, F.Inst.P.** (Research Laboratories of the General Electric Co. Ltd.). **"Some Aspects of Semiconductors."**

Tuesday, January 16th (Scottish Branch), at 7.0 p.m. in the Natural Philosophy Department, The University, Drummond Street, Edinburgh. Joint meeting with the Scottish Section of the Society of Instrument Technology. **Mr. R. S. Medlock** (George Kent, Ltd.). **"Electronic Potentiometry."**

Friday, January 19th (North-Eastern Branch), at 7.0 p.m., in the Physics Lecture Theatre, King's College, Newcastle-upon-Tyne. **Dr. W. F. Berg, F.Inst.P.** (Research Laboratory, Kodak Ltd.). **"The Mechanism of Photographic Latent Image Formation."**

Friday, January 19th (Industrial Radiology Group) at 6.30 p.m., at the Institute's House, 47, Belgrave Square, London, S.W.1. **Mr. W. Watson** (Ilford Ltd.). **"Stereoradiography."** This meeting will be open to discussion and arrangements for viewing stereoscopic radiographs will be available.

Monday, January 22nd (Manchester and District Branch), at 6.15 p.m. Joint Meeting with the Institution of the Rubber Industry in the Engineers' Club, Albert Square, Manchester. **Mr. E. F. Powell** (Dunlop Rubber Company). **"The Application of Physical Techniques in the Rubber Industry."**

Tuesday, January 23rd (Scottish Branch), at 7.0 p.m., in the Natural Philosophy Department, The University, Glasgow. **Mr. H. T. Jessop, F.Inst.P.** (University College, London). **"Photoelasticity."** This lecture will be illustrated by experiments and demonstrations. Admission will be by ticket, application for which should be made to the Branch Secretary.

Wednesday, January 24th (Scottish Branch), at 7.0 p.m., in the Natural Philosophy Department, The University, Drummond Street, Edinburgh. **Mr. H. T. Jessop, F.Inst.P.** (University College, London). **"Photoelasticity."**

Wednesday, January 24th (South Wales Branch), at 5.30 p.m., at University College, Cardiff. **Dr. L. R. G. Treloar, F.Inst.P.** (British Rayon Research Association). **"The Physics of Rubber and High Polymers."**

Wednesday, January 24th (London and Home Counties Branch), at 5.30 p.m. **Private Meeting** to be held at the Royal Society of Tropical Medicine and Hygiene, Manson House, 26, Portland Place, London, W.1. **Professor Kathleen Lonsdale, F.R.S.** (University College, London), and **Professor N. F. Mott, F.R.S., F.Inst.P.** (University of Bristol). **"Ethical Problems of a Physicist."** This meeting is confined to members of the Institute. Admission will be by ticket, application for which should be made to the Deputy Secretary of the Institute as early as possible.

Tuesday, February 6th (Scottish Branch), at 7.0 p.m., in the Natural Philosophy Department, The University, Glasgow. **Dr. E. C. Bullard, F.R.S.** (National Physical Laboratory). **"Siesmology at Sea."**

Wednesday, February 7th (Scottish Branch), at 7.0 p.m., in the Natural Philosophy Department, The University, Drummond Street, Edinburgh. **Dr. E. C. Bullard, F.R.S.** (National Physical Laboratory). **"Siesmology at Sea."**

Saturday, February 10th (South Wales Branch), at 2.0 p.m., at University College, Swansea. **Mr. T. A. Eames, F.Inst.P.** (British Railways Research Department). **"Physics in Railway Research."**

Tuesday, February 13th (Scottish Branch), at 7.0 p.m., in the Natural Philosophy Department, The University, Glasgow. **Sir Ben Lockspeiser, F.R.S.** (Secretary of the Department of Scientific and Industrial Research). **"Scientific Problems in the D.S.I.R."**

Wednesday, February 14th (Scottish Branch), at 5.0 p.m., in the Natural Philosophy Department, Marischal College, Aberdeen. **Mr. W. D. Oliphant, F.Inst.P.** (Ferranti Ltd.). **"Vacuum Physics."**

Thursday, February 15th (Scottish Branch), at 5.0 p.m., in the Natural Philosophy Department, The University, St. Andrews. **Mr. W. D. Oliphant, F.Inst.P.** (Ferranti Ltd.). **"Vacuum Physics."**

Friday, February 16th (Industrial Radiology Group), at 6.30 p.m., at the Institute's House, 47 Belgrave Square, London, S.W.1. **Mr. W. Binks, F.Inst.P.** (National Physical Laboratory). **"Radiological Units and Protection."** Special reference will be made to the conclusions of the recent International Congress of Radiology.

Tuesday, February 20th (North-Eastern Branch), at 7.0 p.m., in the Museum Room of the Technical College, Sunderland. **Mr. J. F. Stirling, A.Inst.P.** (James A. Jobling & Co. Ltd.). **"The Annealing and Tempering of Glass."** This lecture will be illustrated by demonstrations and a film.

Wednesday, February 21st (Manchester and District Branch and Education Group), at 2.15 p.m. Visit to the Physics Department of Manchester University to see the teaching side of the Department.

Tuesday, March 6th (Scottish Branch), at 7.0 p.m., in the Natural Philosophy Department, The University, Glasgow. **Mr. D. T. N. Williamson** (Ferranti Ltd.). **"High Fidelity Sound Reproduction."**

Wednesday, March 7th (Scottish Branch), at 7.0 p.m., in the Natural Philosophy Department, The University, Drummond Street, Edinburgh. **Mr. D. T. N. Williamson** (Ferranti Ltd.). **"High Fidelity Sound Reproduction."**

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